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RESPONSIVENESS SUMMARY
TO PUBLIC COMMENTS ON THE
REMEDIAL INVESTIGATION/FEASIBILITY STUDY,
THE PROPOSED PLAN, AND THE
GROUNDWATER AND TANKS
OPERABLE UNIT RECORD OF DECISION

Purity Oil Sales Site, Fresno, California

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RESPONSIVENESS SUMMARY TO PUBLIC COMMENTS ON THE REMEDIAL INVESTIGATION/FEASIBILITY STUDY, THE PROPOSED PLAN, AND THE GROUNDWATER AND TANKS OPERABLE UNIT RECORD OF DECISION

Purity Oil Sales Site, Fresno, California

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Submitted To:

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1.0 INTRODUCTION

The Remedial Investigation (RI) and the Feasibility Study (FS) for the Purity Oil Sales site, a former oil processing facility that is now a Superfund site, were made available for public review and comment in October 1988 and in April 1989, respectively. Also in April 1989, the U.S. Environmental Protection Agency (EPA) distributed a fact sheet explaining the contents of the FS as well as outlining the Proposed Plan. The Proposed Plan proposed cleaning up the Purity Oil site by pumping and treating the contaminated groundwater, along with excavating, treating, and capping of the soils. A public comment period on the FS and the proposed plan was open from April 17 through May 16, 1989. Comments by the public were submitted to EPA, and a Responsiveness Summary addressing the comments was issued on August 9, 1989.

In September 1989 the Record of Decision (ROD) for the Groundwater and Tanks Operable Unit (OU) was issued, which represents the remedial action selected by EPA. The ROD for the Purity Oil site includes the following actions to address contaminated groundwater and tanks:

- Water treatment to remove volatile organic compounds (VOCs), iron and manganese from the groundwater to include:
  - Extraction of contaminated groundwater.
  - Treatment of the extracted contaminated groundwater using greensand and air stripping to attain federal and state drinking water standards. Carbon adsorption will be used to control air emissions, if needed.
  - Disposal of treated and tested groundwater by use of one or more of the following methods: reinjection into the aquifer, disposal in the North Central Canal or disposal in local infiltration basins.
  - Groundwater monitoring to verify contaminant cleanup.
  - Creation of a groundwater management zone extending 1 to 2 miles from the cleanup target area to control pumping to maintain groundwater levels at the desired configuration.
- Tank cleanup and removal to include:
  - Removal and off-site disposal of the contaminated wastes contained in the seven onsite steel tanks.
  - Solidification of the wastes, if needed, prior to off-site disposal.
  - Cleaning, dismantling and off-site disposal of the tanks.

The Groundwater and Tanks OU ROD enables cleanup of the contaminated aquifer and removal of the tanks to proceed as quickly as possible. This will reduce the spread of groundwater contamination and prevent the use of contaminated water by private well owners. By removing the tanks, a nuisance and potential health

and safety hazard at the site will be eliminated. The Groundwater and Tanks OU ROD will be supplemented later by a Soils OU ROD that will address the contaminated soils that may be a continuing source of groundwater contamination from the site.

EPA has recently (1990) found Potentially Responsible Parties (PRPs) who may be liable for the contamination at the site. In order to allow the new-found PRPs the opportunity to review and comment on site remediation related documents, EPA re-opened the comment period on the RI/FS, the Proposed Plan and the ROD for the Groundwater and Tanks OU from June 27, 1990 to July 26, 1990. During this period, comments were once again submitted by the public (primarily by PRPs), and these comments are responded to in this document.

This responsiveness summary addresses only those comments submitted during the re-opened comment period that pertain to the Groundwater and Tanks OU. Comments that pertain to the Soils OU will be addressed in a subsequent responsiveness summary document accompanying the Soils OU ROD.

2.0 COMMENTS AND RESPONSES

Written comments on the Groundwater and Tanks OU were received during the re-opened comment period from the following sources:

- Department of the Air Force
- County of Fresno.

COMMENT:

No. 1 **Department of the Air Force** - For the selected groundwater remedy, Alternative W3 will cost an estimated $11-20 million over the next 10-20 years. Under the risk characterization portion of the ROD, for residential and occupational groundwater users, excess cancer risks ranged from $8x10^{-8}$ to $4x10^{-4}$ for the worst case exposure and $2x10^{-8}$ to $8x10^{-5}$ for the most probable exposure. If, as the ROD notes, EPA selects site remedies from within a 10^{-4} to 10^{-7} risk range, with a general goal of achieving a 10^{-6} level of protection, then there is a low level of risk inasmuch as the potential risks are already very close to the goals. The $11-20 million cost appears excessive to achieve these goals.

RESPONSE:

Alternative W3 would pump and treat the contaminated groundwater in the plume to State Action Levels (SALs) area whereas Alternative W2 would pump and treat the groundwater to Federal Maximum Contaminant Levels (MCLs). The MCL Area would include the groundwater beneath the entire site and areas downgradient of the site where total VOC concentrations are greater than 10 ppb. The SAL Area would include a much larger portion of the aquifer comprising the MCL Area plus additional areas where the detected

concentrations of 1,2-dichloroethane (1,2-DCA), the most widespread of the volatile organic compounds (VOCs), have been measured as equal to or greater than the 1-ppb SAL. The MCL Area would include the Purity Oil site and a plume Area extending approximately 1,000 ft north of the site. The SAL Area would include the MCL Area plus areas up to approximately 3,500 ft northwest of the site. Since Alternative W3 would treat a much larger portion of the contaminated groundwater plume than Alternative W2 and would pump and treat greater volumes of water (an estimated 1,450 gpm vs 450 gpm), it would be about twice as costly as Alternative W2.

The commentor believes that the cost of implementing Alternative W3 is excessive (we assume in comparison to Alternative W2) for the lessening of potential excess cancer risk gained. The present worth cost of Alternative W3 is estimated to be $11.54 million and of Alternative W2 to be $6.42 million. The difference of $5 million results in a reduced potential risk of cancer for a hypothetical residential water user, e.g., from 10^{-5} down to 10^{-6}, or less. Both alternatives fall within EPA's 10^{-4} to 10^{-6} health risk range. Health risk was not the sole determining factor in EPA's selecting Alternative W3 over W2. Other evaluation criteria that played a crucial role in remedy selection were state Applicable or Relevant and Appropriate Requirements (ARARs), state acceptance, and reduction of toxicity, mobility and volume of the contaminants.

EPA guidance makes it clear that in order for a remedial alternative to be considered as a selected remedy, it must meet the two threshold criteria: (1) overall protection of human health based on analysis over all chemicals and pathways combined (health risk assessment) and (2) must meet ARARs. EPA's cleanup goals for the groundwater at the Purity Oil site are based on residential and occupational water users ingesting the groundwater. To protect public health, the cleanup goals were established by EPA to meet MCLs, SALs, and an excess cancer risk from carcinogens of under 10^{-6}. The groundwater cleanup criteria being considered by EPA for the Purity Oil site for a particular contaminant are the Federal and State MCLs and SALs, if they have been established for the contaminant.

If a Federal or State MCL or SAL has not been established for a particular contaminant, the cleanup criteria will be the contaminant concentration that poses an excess cancer risk of 10^{-6}. The groundwater cleanup criteria are presented in Table 2-3 of the FS. As explained in the risk assessment, the excess cancer risks were estimated under the worst-case exposure and most probable exposure scenarios for residential and occupational users.

Although both Alternatives W2 and W3 fall within the health risk range of 10^{-4} to 10^{-6}, Alternative W3 would result in the lowest potential health risk (10^{-6}). In addition to achieving a lower potential cancer risk, Alternative W3 would meet the State of California promulgated MCL for 1,2-DCA of 0.5 ppb, an ARAR for the site, whereas Alternative W2 would not. Also, W3 would extract and treat contaminated groundwater from the leading portion of the plume (the SAL Area) lessening the risk of contaminated groundwater migrating to the Northwest, thereby controlling the future risk to downgradient water users. Alternative W2 would not accomplish this objective.

COMMENT:

No. 2 **Department of the Air Force** - Within the Implementation Elements for Alternative W3 section, monitoring requirements for W3 were discussed. The ROD indicates that once the off-site contamination has been reduced to levels established by EPA and the state, an assessment will be made to determine if the site is still a source of groundwater contamination. However, no standards have been delineated in the ROD. Are they going to be less than or greater than the Maximum Contamination Levels (MCLs)? Without knowing the standards to be used, it is difficult to comment further.

RESPONSE:

The commentor is incorrect in stating that no standards for the off-site groundwater contamination have been delineated in the ROD. Page 16, paragraph 1 of the Groundwater and Tanks OU ROD state that "1,2-DCA was detected above the State of California maximum contaminant level (MCL) of 0.5 ppb in several of the downgradient wells as far as 2,800 ft from the site. The state MCL is considered an ARAR for site remedial action." Table 4 of the ROD (attached) indicates which constituents detected in the groundwater exceeded federal and/or state standards and action levels. As stated in the ROD, "these standards and action levels are the cleanup goals for the site".

COMMENT:

No. 3 **County of Fresno** - Contamination of the surface and subsurface soils, debris, and existing tank structures remaining are also a concern to the County. The tank structures presently on site were not involved in the emergency remedial actions undertaken by the EPA in 1985. However now, some five years later, the EPA has found that imminent and substantial public health and safety endangerment exists, because the EPA now states, these tanks containing oil sludge materials have not been mitigated.

In August 1989, a grass fire occurred onsite that involved these tanks. The fire caused great concern to the local Emergency Response agencies and the community over the potential toxic nature of the smoke emanating from the tanks and drifting off-site to neighboring property areas. Local agency representatives at the scene contacted the EPA Emergency Response Team representatives in San Francisco in an attempt to ascertain the extent of toxic contamination which might result from the fire and resultant smoke. EPA's response was that the material in the tanks was not a problem, and that burning debris in the tanks posed no significant detriment to health or the environment.

The County of Fresno is also concerned about public health and safety in relation to potential exposure to materials when unauthorized entry to the site occurs. For that reason, the County of Fresno previously paid a portion of the cost of fencing the site to prevent unauthorized entry.

However, the EPA's inconsistency of the imminent and substantial endangerment status of the surface structures and the additional emergency remedial activities planned for the site are cause for concern, particularly since the estimated cost for same is in the area of $1 million. Given that these structures were deemed not to pose an imminent threat to public health and safety in 1985 and 1989, the County questions the accuracy of the present finding of imminency, sufficient to warrant emergency remedial activities. Furthermore, the costs for remobilization when there is activity at the site is great, and defining a public health and safety hazard in 1990 when there was no such hazard in 1985 or August, 1989 leads one to question the necessity of spending this type of money for "emergency" remediation.

At present, the EPA proposes to spend $2 million for emergency work at the site, which as shown above, was not an emergency last year, nor even five years ago. When County staff has questioned the need for this expenditure, the EPA has stated that the amount to be spent is minuscule in comparison with the EPA's projected cost of cleanup at $40 - 50 million. The issue is not whether $2 million is minuscule, but in the usage of taxpayer funds, whether the plan is appropriate and provides the greatest benefit to public health and the environment for the funds to be spent. This has clearly not been demonstrated in the inadequate documentation presented to date.

RESPONSE:

This comment is no longer relevant since the tanks were removed in the fall of 1990. However, the commentor is largely correct in stating that during both the emergency remedial actions undertaken by EPA in 1985 and during the fire at the site in 1989, EPA did not consider the onsite steel tanks and other debris as an imminent and substantial public health and safety endangerment. As such, the tanks were not dealt with as part of earlier emergency actions. As stated in the Groundwater and Tanks OU ROD, all of the tanks and debris were to be removed as part of the selected remedy. The one exception was that one of the tanks was drained as an emergency removal action in 1987.

The selected remedy for tank cleanup at the Purity Oil site, as stated in the Groundwater and Tanks OU ROD, was as follows. The contaminated wastes in the seven onsite steel tanks were to be removed and transported to a RCRA Class I landfill for disposal. The wastes were to be removed using a backhoe or a crane with a bucket and placed in 55-gallon drums. It was thought that solidification of a portion of the wastes might be necessary. The seven tanks were to be scraped by hand to remove any remaining loose, tarry sludge. The asbestos coating on Tank 5 was to be removed and packaged for off-site disposal. The steel tanks were to be dismantled and transported to an approved off-site landfill or scrap yard.

Cleanup of the steel tanks and debris at the Purity Oil site was completed as part of the selected remedy by Bechtel, an EPA contractor. Cleanup began in early October 1990 and was completed by late November, 1990.

Cleanup activities followed the selected remedy as described above with a few minor alterations that were required as the cleanup efforts progressed.

Sixteen bins were staged to store the collected wastes for eventual off-site disposal. The sludge that was non-viscous enough to be pumped was pumped into Baker tanks. Where appropriate, diesel fluid was added to the sludge in attempts to dilute it. The "taffy-like" sludge that could not be pumped was made more solid by adding diatomaceous earth and was removed with a backhoe and/or shoveled by hand and put into the bins. The tanks were then cut up using a hydroshear and pressure washed, with the rinsewater being stored in a Baker tank that was removed off-site. All other debris (i.e., lumber, junk) was also removed to the bins either manually or with a tractavator. The cleaned pieces of scrap metal were removed and given to Brunos Metal Scrapyard, located on the adjacent property. The asbestos coating on Tank 5 was removed, packaged, manifested and transported to a site permitted to accept asbestos. The area was then graded.

The sixteen bins are presently (February 1991) still staged at the site awaiting final determination as to the fate of the waste based on chemical analysis. The waste will either pass EPA's Toxicity Characteristic Leachate Procedure (TCLP) test and be landfilled at the Kettleman Hills RCRA permitted landfill or will require incineration.

The above described removal actions were completed as part of the selected remedy, not as an emergency action. An imminent and substantial public health and safety endangerment was not considered to exist due to the tanks' presence on the site. However, important reasons for early removal were (1) liability concerns in case someone gained access to the site, (2) to remove a fire hazard, and (3) to remove obstacles that might impact air emissions sampling/monitoring studies, etc. Finally, any final remediation of the site soils would eventually require removal of the tanks.

There was believed to be little or no increased cost of contractor mobilization for tank cleanup and removal. The type of work is of a specialty nature and would probably not have been done directly by a future general contractor in any case. It is possible that the tank cleanup was done more cheaply as an individual contract than if it were part of a large overall site contract, because of the savings in general contractor add-on costs to subcontracts.

COMMENT:

No.4 **County of Fresno** - The Remedial Investigations (RI) that have been conducted by the State of California, Department of Health Services (DHS) and the Environmental Protection Agency (EPA) do not adequately characterize the nature and extent of the groundwater contamination plume. Much of the information contained in the RI has substantial data gaps. The level of accuracy provided in the downgradient monitoring is

insufficient to reach any justifiable conclusions regarding the impact that the Purity Oil site has on the groundwater.

RESPONSE:

This comment questions (1) the adequacy of work performed in characterizing the nature and extent of contamination, and (2) the "level of accuracy" of data that is needed to determine the impact that the Purity Oil Sales site has had on contaminating the groundwater. In addition, the comment states that substantial data gaps exist, although it does not elaborate on what particular data are lacking.

No field investigation can provide an exact determination of the extent of contamination. The purpose of the RI is to define the nature and extent of contamination of environmental media to the "degree" needed for evaluation of remedial action alternatives. The data that have been collected and summarized in the Remedial Investigation Report (October 1988) and the "Final Summary Report, Groundwater Characteristics, Purity Oil Sales Site, Fresno, California" (August 1990) indicate that there is sufficient information to logically conclude that the Purity Oil site is the source of groundwater contamination that has been observed downgradient of the site. In addition, sufficient information exists to adequately characterize the extent of contamination needed to properly evaluate remedial action alternatives.

The major findings of the RI Report have been substantiated with the subsequent addition of three groundwater monitoring wells located approximately 2,800 ft downgradient of the site and in the vicinity of the private wells (see Final Summary Report, August 1990). A fourth round of groundwater sampling confirms the presence of organic contamination in this area and gives credibility to previously reported data from private wells. In particular, the data clearly indicate the presence of about 1 ppb of 1,2-DCA in groundwater in this area. Overall, even though some of the data from the initial three rounds of groundwater sampling can only be used in a qualitative sense (i.e., order of magnitude), the data are consistent with the fourth round of sampling, which indicates that volatile, semivolatile, and inorganic contaminants are present in the groundwater system. The attached Table 1 summarizes the presence of contaminants that have been consistently detected in the groundwater system, both beneath and downgradient of the site.

The validity of data collected from private wells has been substantiated with data collected from the three recently installed monitoring wells in the area. The vertical and horizontal extent of groundwater contamination has been defined to a sufficient degree to adequately evaluate the costs of pump-and-treat remedial actions.

COMMENT:

No. 5 **County of Fresno** - For over ten years, the DHS and EPA have been attempting to ascertain the impacts that the Purity Oil site has upon the environment and public health. However, one of the most important questions, that of the groundwater contamination plume, has never been defined. Given the nature of the area, and the industrial locations which are downgradient to the site, much speculation has been created that these other industrial locations may be contributing to the groundwater contamination.

Over three years ago, the County of Fresno requested the EPA Project Manager and consultant address the issue as to whether other industrial locations are contributing to the groundwater contamination plume in the downgradient areas. To date, this issue has not been resolved by either the EPA or DHS.

The critical issue posed by the failure to assess the contamination plume is that the RI is premature until such time as the contamination plume has been identified. Unless it is identified, any action taken to abate the problems caused by the plume may not take into consideration contamination from other nearby industrial sites, thus leaving the remediation of the contamination insufficient. In addition, to fail to adequately address the contamination plume could well mean that the EPA, DHS and PRP's could well end up paying for remediating contamination which is not caused by the Purity Oil site.

The EPA has assumed that the source of 1,2-DCA, which is at or exceeds present State Action Levels (SAL), in the five downgradient private wells is associated with the Purity Oil site. Other nearby industrial sites could well be contributing to the 1,2-DCA contamination, and could considerably impact remedial alternatives. In addition, if Purity Oil is the only source of the volatile organic compounds detected, plume definition beyond the downgradient wells should have been defined prior to proposing remediation alternatives. It is incumbent to undertake additional investigation in order to ascertain the appropriate remedial action.

The problem of inaccurate and incomplete data is compounded by the fact that 1,2-DCA has been found in private wells, which are not groundwater monitoring wells, approximately 2,800 ft downgradient from the site. To the best of our knowledge, there is no construction information about the wells such that it is known whether or not these wells are even tapping into the same aquifer that shows contamination from the Purity Oil site. However, monitoring wells between these private wells and the site do not show any 1,2-DCA contamination. This finding bolsters the concern of Fresno County that the contaminant plume may not be totally attributable to Purity Oil, and that cleaning up Purity Oil would thus not resolve the issue of groundwater contamination.

RESPONSE:

This comment is similar to the previous one but raises an additional concern that there may be sources other than the Purity Oil site that are contributing to groundwater contamination. Comments concerning the adequacy of delineating the groundwater plume were discussed in the Response to Comment 4. This response addresses the possibility of multiple sources.

The statement, "Given the nature of the area, and the industrial locations which are downgradient to the site, much speculation has been created that these other industrial locations may be contributing to the groundwater contamination," is vague in that it does not indicate which sites, other than the Purity Oil Sales site, are likely contributors of observed contaminants in groundwater. Present-day land-use patterns (and historical land-use patterns, as determined from aerial photographs) indicate that the Purity Oil site is the most likely source of observed contamination. In particular, the presence of 1,2-DCA, both onsite and downgradient, does not appear to have another source as detailed in the following paragraphs.

The data clearly indicate the presence of about 1 ppb of 1,2-DCA in groundwater in the area beneath the site and downgradient. Analyses from both private and monitoring wells have detected 1,2-DCA (PW-39 [1 ppb]; PWN [2 ppb]; PWV [1 ppb]; MW10I [1 ppb]; see Final Summary Report, Figure 4-1). Analyses from other wells that are located between these wells and downgradient of the site have also detected 1,2-DCA (PWNN [3 ppb]; PWNS [1 ppb]; and MW-8 [1 ppb]). Finally, analyses from wells that are located onsite have detected 1,2-DCA (W1-0 [4 ppb]; W1-5 [6 ppb]; W3-0 [3 ppb]; and EPA-2 [2 ppb]). The fact that 1,2-DCA has also been detected in soil borings in the unsaturated zone beneath the site (B15-07 [290 ppb]; SBP6-02 [200 ppb]; see RI, Figures 5-12 and 5-20) strongly implies that the most likely source of 1,2-DCA contamination of groundwater is the site itself. In general, contaminants that were disposed of on the surface or in pits would be expected to travel vertically within the unsaturated zone until they reached the groundwater table. Upon entering the groundwater system, local groundwater flow patterns would determine their fate. In other words, the presence of 1,2-DCA in the unsaturated zone at the site cannot be attributed to disposal from any site other than the site itself. It is logical to conclude, then, that contaminated groundwater beneath and downgradient of the site is the result of contamination emanating from the unsaturated zone at the site.

The comment is made that there appears to be multiple sources contributing to groundwater contamination, because 1,2-DCA has been detected in private wells located downgradient of the Purity Oil site but not in some monitoring wells that are located between the private wells and the site. The observation that 1,2-DCA has not been detected at some downgradient monitoring wells does not diminish the likelihood that the Purity Oil site is the source of groundwater contamination. Two scenarios (Figure 1) have been developed to show the conditions under which 1,2-DCA would not be detected in some downgradient monitoring wells.

The first scenario is concerned with the spacing of downgradient monitoring wells in relation to the width of the groundwater plume. Obviously, with a finite number of wells, the extent of a plume cannot be characterized precisely. The combination of discrete placing of monitoring wells at variable screened intervals, and the heterogeneous nature of the unconfined aquifer, could result in contaminants not being detected in some monitoring wells. The assumption that all monitoring wells located downgradient of the site should show contamination implies, among other things, that a continuous source of injection into a groundwater system with uniform aquifer properties occurs and that the spreading of contaminants is continuous and uniform with time (Figure 1 [a]). It is unlikely that these conditions have occurred at this site. It is possible that the plume is confined to a relatively narrow horizontal and vertical extent in the region where it has not been detected by some monitoring wells.

The second scenario is concerned with how the contaminant, 1,2-DCA, entered the groundwater system. If the contaminant was introduced to the system as a "slug" or "slugs," then it is conceivable that certain monitoring wells did not detect contamination while other wells did (Figure 1 [b]). In addition, some monitoring wells might indicate contamination during one round of groundwater sampling and show no contamination during a later round of sampling, or vice versa. Factors such as the time and duration of disposal, the amount and concentration introduced to the groundwater system, aquifer properties, and regional groundwater flow rates would determine the location of various contaminant slugs within the groundwater system. At present, the 50-year disposal history of contaminants at the Purity Oil site is not known, but it is not unusual to expect that certain contaminants have entered the groundwater system in a continuous manner while others have entered as slugs (i.e., the introduction of 1,2-DCA into the groundwater system may not have been continuous with time).

COMMENT:

No. 6 **County of Fresno** - There have only been three rounds of groundwater sampling for the purpose of determining the nature and extent of contamination during the past 10 years that the site has been subject to federal and state cleanup. As mentioned previously, there is insufficient data known about the private wells to give credence to any results. In addition, the chemical analyses contain results which have clarifiers or qualifiers after the number. One such clarifier or qualifier is indicated as (J), being "indicates an estimated value, valid for **qualitative** use only due to precision, calibration or holding time problems." No proper usage of this type of data can be made, particularly when the decision as to treatment alternative is supposedly based upon the groundwater test results. Another clarifier or qualifier is (UJ), being "due to blank contamination or other deficiencies, sample quantitation is adjusted". This type of data would not be found acceptable by the EPA if it were submitted by a regulated entity, and this type of data is wholly insufficient to support any remediation alternative. And this causes extreme concerns when the EPA bases its estimation of the vertical extent of contamination on one sample which had problems with the sample blank.

Given the vast number of results which are thus qualified or clarified, the entire validity of the groundwater monitoring system is called into question, much less the extrapolated results derived therefrom. Until such time as the groundwater monitoring system is rectified, no actions should be taken which are based on the data derived from the groundwater monitoring, and no remediation plan should be developed much less implemented until the EPA has corrected these problems.

RESPONSE:

The comment by the County of Fresno suggests that a problem arises with the use of J-qualified data. "One such clarifier or qualifier is indicated as (J), being 'indicated an estimated value, valid for qualitative use only due to precision, calibration, or holding time problems.' No proper usage of this data can be made...."

EPA guidance on the use of J-qualified data is clear: "...J-qualified Contract Laboratory Program (CLP) data represents data of good quality and reasonable confidence and is thus suitable for decision-making in Superfund...." (EPA Memo from Howard Fribush to Suzanne Wells, September 29, 1989). The memo also states that the J-qualifier can be added to data for several reasons, including data below the Contract Required Detection Limit, or that one or more quality control requirements have not met contract-required acceptance criteria. The memo continues "The J-qualifier is a quantitative qualifier and can mean one or more of several things: 1) the target analyte is definitely present, 2) the sample was difficult to analyze, 3) the value may lie at the low end of the linear range of the instrument, and 4) the value should always be seriously considered in decision making.... Further, since J-qualified data represents an analytical system largely in control, J-data also represents data adequate for decision-making in Superfund."

Thus, even though some sample results are qualified, the fact that contaminated groundwater exists has been established. It should be noted that analysis of Appendix F of the RI determined that 13 percent of the chemical data was qualified, a figure that is consistent with the large amount of data analyzed. The present body of qualitative and quantitative information regarding the kind of contaminants present and their levels is sufficient to examine potential treatment technologies and proceed with remediation.

The responder was unable to find the data listed in the comment as having the qualifier UJ, nor could the sample be found, which the comment says is used to estimate the vertical extent of contamination.

COMMENT:

No. 7 **County of Fresno** - In the EPA documentation, the estimated migration of contaminants in the groundwater is 50 ft per year. The EPA estimates that the site was operating throughout its 50-year life in the same manner, and thus the contaminants could have migrated in excess of 2,800 ft from

the site. At present, it is unknown whether or not the site was operated in the same manner throughout its 50-year life. If there is a significant difference in the amount of time that the plant was operated in a way that created groundwater contamination, the assumptions are inaccurate and the results are thus skewed.

RESPONSE:

The EPA is not claiming that the Purity Oil site has been operated in exactly the same manner throughout its 50-year life. Obviously, changes probably did occur in equipment, processes, procedures, etc. that reflected advancements in the oil recycling industry. However, as noted in previous responses, the length of the contaminant plume has been determined by groundwater sampling to be about 2,800 ft. The estimated theoretical migration rate of approximately 50 ft per year for the contaminants of concern simply shows that it is possible for contaminants to have traveled 2,800 ft during 50 years (a rate of 56 ft per year). The measured length of the plume, the number of years the site has been in operation, and the theoretical migration rate of contaminants through soil are all consistent with the possibility that the Purity Oil site is the source of the contamination.

COMMENT:

No. 8 **County of Fresno** - The County of Fresno is concerned that the site has been subject to study by federal and state regulatory agencies for a period of ten years. No interim remediation has been taken of the groundwater plume during this period of time, and the plume remains insufficiently identified to be able to ascertain whether the remediation suggested will, in fact, be successful since the data is inconclusive and subject to differing interpretations. The data which has been accumulated to date is woefully inadequate, particularly given the amount of time and money that has been spent to accumulate the data.

RESPONSE:

The commentor is correct in stating that the site has been subject to study by federal and state regulatory agencies for a period of ten years. Federal and state involvement has included the following:

- In 1979 the State of California (who held the site since 1975) sold the property to William Enns.
- In 1980, the Department of Health Services (DHS) informed William Enns that a serious hazardous waste problem existed on his property and requested a cleanup plan. Mr. Enns went to court requesting a rescission of the sale.

- During 1981, the RWQCB obtained surface water samples from the North Central Canal.

- The chain-link and barbed wire fence surrounding the site was constructed in February 1981.

- On September 10, 1982, the rescission was granted, and the site was returned to the custody of the State of California.

- In 1982, the EPA Emergency Response Team installed several monitoring wells in and around the site and collected surface and subsurface soil samples and groundwater samples. This investigation demonstrated that the onsite soil and groundwater was contaminated.

- In December 1982, the site was included on the EPA National Priorities List (NPL).

- As lead agency for the site, DHS solicited proposals for the Purity Oil RI/FS in March 1983.

- On September 1, 1983, DHS retained Harding Lawson Associates (HLA) to conduct the Purity Oil RI.

- From 1984 to 1987, HLA performed field exploration and chemical testing, and prepared an RI report on May 12, 1986. During the field exploration, Gunite was used to cover a small slope adjacent to the trailer park that had exposed oily waste.

- From February through May 1985, the EPA Emergency Response Team removed about 1,800 cubic yards of hazardous oily/tarry materials from the site.

- In January 1986, EPA retained CH2M Hill to expand the RI work performed by HLA to include additional soil and groundwater studies.

- During September 1987, EPA removed approximately 33,000 gallons of oil and water from Tank No. 1 as an emergency removal action.

- CH2M Hill completed the expanded RI in Oct 1988.

- In April 1989, CH2M Hill completed the FS. A fact sheet explaining the contents of the FS and outlining the Proposed Plan was distributed to the public.

- In September, 1989, the ROD for the Groundwater and Tanks OU was issued, which presented the remedial action selected by EPA.

- A responsiveness summary addressing public comments on the RI/FS, the Proposed Plan and the Groundwater and Tanks OU ROD was issued on August 9, 1989.

- Additional monitoring wells were installed and a fourth round of groundwater sampling was conducted between November 7 and December 5, 1989. The "Final Summary Report Groundwater Characteristics" report was issued in August, 1990.

- As the initial action of the selected remedy, cleanup and removal of the steel tanks and debris along with grading of the site was conducted between October and November 1990.

- Soil treatability studies, i.e., rotary kiln incineration, solvent extraction, thermal separation and solidification are currently ongoing. These technologies will be considered in the upcoming Soils OU ROD.

EPA has been the lead agency for the Purity Oil site since 1986. Since that time, the expanded RI has been completed as well as the FS. Some onsite emergency actions were performed as well as the recent removal of all seven steel tanks and related debris as part of the selected remedy. The public has been kept informed and has participated as decisions have been made and actions taken. Completing these major steps in the CERCLA process in the four years since EPA has been lead agency is within an acceptable time frame for comparable sites across the country.

Interim remediation of groundwater has not been considered necessary for this site. Early in the site investigation/remediation process, affected well users were informed that their wells were contaminated, and EPA strongly recommended that they provide themselves with an alternate water supply. EPA is presently designing a water supply system for the affected area. The commentors concerns regarding the adequacy of groundwater plume delineation and the quality and adequacy of the data accumulated were expressed without the commentor having the benefit of reviewing the latest monitoring well data as presented in the "Final Summary Report, Groundwater Characteristics Report." These concerns have been addressed in Responses Nos. 4,5 and 6 of this document.

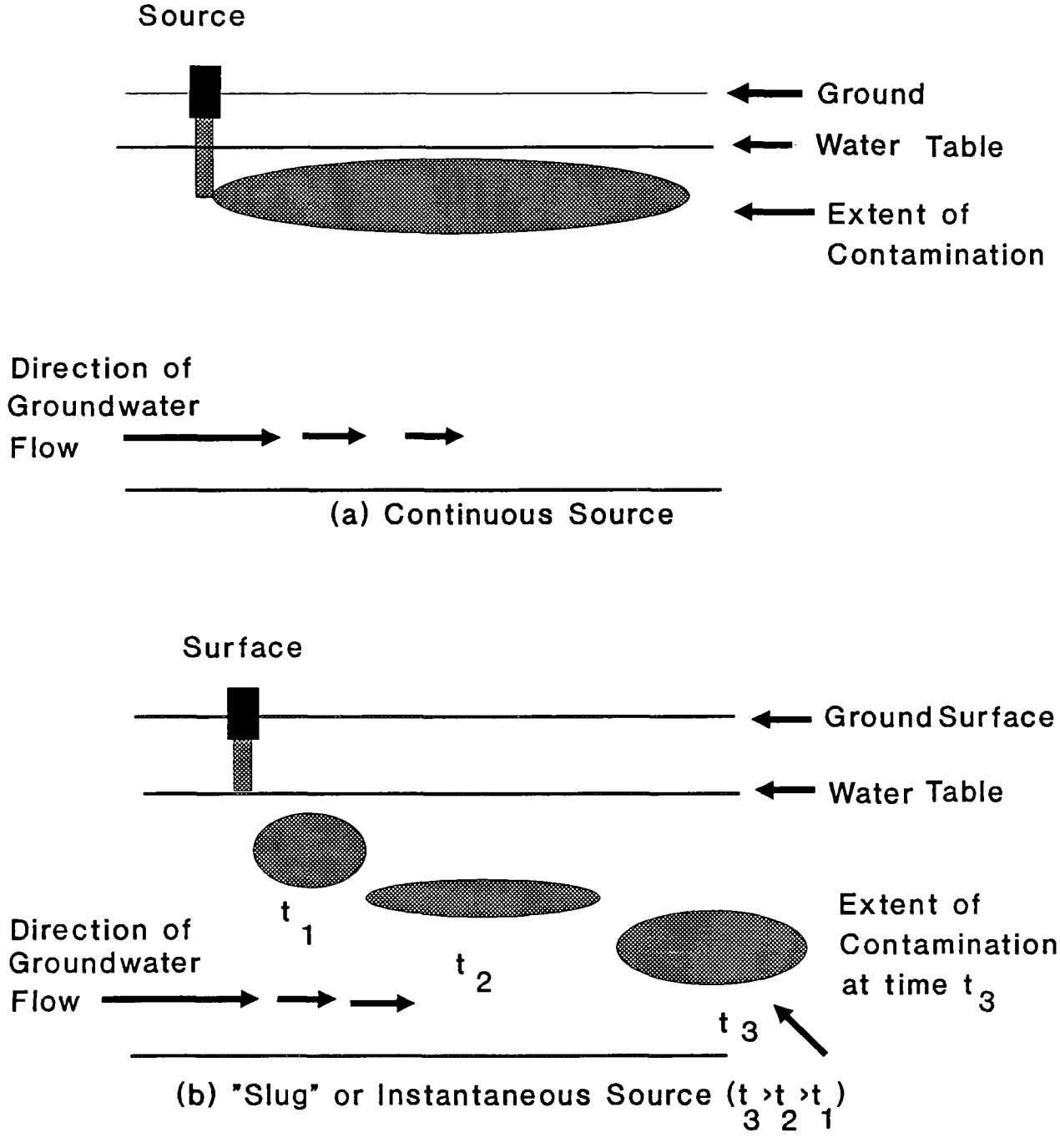

Figure 1. Introduction of contaminants to groundwater via continuous source versus "slug" or instantaneous source

TABLE 1. Wells that Consistently Show the Presence of Volatile Organic Compounds. (Table excerpted from Final Summary Report, Groundwater Characteristics, Purity Oil Sales Site)

Well	Compound									
	1,2-Dichloroethane	1,1-Dichloroethane	1,2-Dichloroethene (Total)	Trichloroethene	Chlorobenzene	1,2-Dichloropropane	Total Xylenes	1,1,2-Trichloromethane	Vinyl Chloride	Chloroform
MW-2S	X	X	X	X	X		X			
MW-3			X							
MW-5	X	X	X	X	X	X			X	
MW-8	X	X			X					
MW-10I[a]	X									
W-1S	X		X	X						
W-1D		X	X	X						
W-2S		X	X							
PWP	X									
PWN	X	X				X				
PW-NN								X		
PWQ										X
PW-39	X									

[a]Installed November 1989; sampled November-December 1989 only.